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Chronic nasal catarrh in Children.

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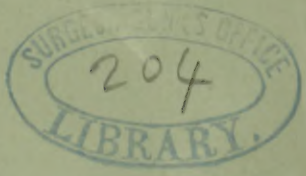

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# CHRONIC NASAL CATARRH IN CHILDREN.

By

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In many instances the clinical history of a case of chronic nasal catarrh in the adult embraces groups of symptoms which belong to the period of childhood. Comparisons of numbers of such histories force the observer to the conclusion that the juvenile phase of the disease includes various conditions of the nasal chambers, and of the pharynx. A lady, aged thirty, reporting for the treatment of a catarrh which had persisted from the seventh year, recalled the distress at that time experienced from the frequent passage of mucus from the naso-pharynx to the oro-pharynx. A young man, aged twenty, who suffered from obstruction of the nasal chambers, and whose tonsils were normal at the time of examination, remembered the fact that these bodies were of large size when he was quite young. A third patient, aged thirty-five, suffering from copious muco-purulent discharge from the nose, complicated with pharyngitis, was confident that the habit of hacking had annoyed him as early as his ninth year to as great a degree as at the date of reporting for relief. While it must be conceded

that in recording the clinical history of an adult, allowance must be made for lapses of memory and for the probable coexistence of exanthematous and of diphtheritic sore-throats, it is certain that some of the little patients who come under care exhibit symptoms which are apt to persist in some modified form in adult life.

In the light of such evidence it becomes a matter of interest to ascertain what peculiarities, if any, are to be found which characterize chronic nasal catarrh in children.

Accepting as an axiom that this disease cannot be appropriately studied without a correct understanding of the structures of the nasal chambers, it must follow that the differences between the adult and other juvenile phases of the disease may be expressed in some degree by the differences between the peculiarities of the chambers themselves at the two periods.

In the child the vestibule is small, the floor is raised, the inferior meatus is shallow, the mucous membrane is of a delicate red color, and the eminences corresponding to the anterior ends of the inferior turbinated bones are rounded, and relatively of greater length than in the adult.

In part owing to the difficulties attending examinations, and in part to inherent distinctions, the juvenile aspect of the disease is marked by a number of negative features. Thus, the membranes are never infiltrated with the products of inflammation, or corrugated, or ulcerated. The lower border of the inferior turbinated bone is never concealed within a deep inferior meatus. The septum is never, or almost never, deflected, unless a history of injury explains

such deflection. Disease is never located above the respiratory tract. Atrophic catarrh is unknown.

*Symptomatology and Diagnosis.*—Congestion and acute inflammation of the nasal mucous membrane is common in childhood. The discharge in the beginning of the attack is almost always mucoid. The serous stage so commonly present after profound impression in adults, is not recognizable, and the transition is usually abrupt between a discharge of mucus to one of muco-pus. If air passes freely through the chambers the discharge is apt to dry and to form "crusts" or "scabs." These collect for the most part in the vestibule, though they may form at any portion of the respiratory tract. The discharge will often remain muco-purulent throughout the entire treatment, so that instead of expecting a return of the mucoid stage the practitioner should look forward to a gradual cessation of the amount of the discharge. The muco-pus in favorable cases becomes thicker as the case improves, and toward the close is often of the consistence of curd.

The child either "sniffles" in order to draw into the nose the discharge which, from the shallowness of the vestibule, inclines to flow outward from the nostrils, or it exhales or "hawks" if it inclines to fall into the pharynx. By careful observation of these acts it can be ascertained that the place at which the discharge is most annoying (all things remaining the same), is also the place at which the greatest amount of obstruction exists.

Should the tonsils be very large and establish mouth breathing, care should be taken not to confound the tumid state of the membranes of the nasal

chamber with the evidences of local disease. Although the two conditions of nasal catarrh and enlargement of the tonsils often exist together, they need not.

When tumid tonsils are present the probabilities are in favor of the adenoid growths at the roof of the pharynx being in the same condition. The naso-pharynx in such patients is occupied with tenacious mucoid discharge. The nasal chambers and the naso-pharynx considered as parts of a single chamber are shut off from communication with the oro-pharynx and the normal downward flow of mucus prevented. The mucus can be at times brought away through the nose by the handkerchief, and the impression may be erroneously received that the discharge, instead of being pharyngeal and mechanically retained, is catarrhal, and that it originates in the nose.

It need be scarcely necessary to say that the presence of mucus in a naso-pharynx which is thus narrowed, the danger to aural complication is decided, and, while the condition is one not admitting of classification with cases of true nasal catarrh, the diseases of the nose and ear are inextricably associated.

The general health is rarely good, and symptoms which relate to mal-nutrition are so pronounced that they have received careful attention at the hands of the writers on diseases of children. This subject is elaborated in the succeeding paragraphs.

*Etiology.*—Chronic catarrhal states in childhood are invariably associated with other effects of mal-nutrition. While this is not a novel statement, it is at

least one which has been imperfectly formulated. Such effects should not be dismissed as being simply those of scrofula and of rickets, but should be exactly referred, as far as it is possible so to do, to the laws of development. Many conditions are present in patients who suffer from catarrh, which may be called errors in development. It is true, these errors are not of the kind denominated "variation" or "anomaly" but are pathological, and may be regarded as the results of precocity or retardation occurring in rapidly growing tissues. They are conspicuous in bone-tissue, tooth-tissues, skin-tissues, lymphatic tissue, and in nerve-tissue.

From the earliest period in development to its completion at the twenty-first year, disease will modify structural processes much more readily and profoundly than at any subsequent period. The tissues may be said to be more plastic during the formative period and to retain the impress of morbid action a longer time than in the adult, and to carry into the future the results of this impress in altered relation or proportion of the formed elements. It is not intended in this place to show that chronic nasal catarrh is in any respect peculiar in this regard, but to invite attention to the operation of such forces which appear to have escaped detection.

The period of childhood is marked by changes as great in the proportions of the parts of the head and face as in any other parts of the body. The growth of the brain and the development of the permanent teeth are among the more striking of these. Clinical writers lay great stress upon the influence exerted on the economy, by the errors of cerebral and dental

growths. Are the influences they exert in the etiology or in the maintenance of nasal catarrh to be ignored?

The condition of the development of the brain in connection with those of the nasal chambers while one of great interest presents difficulties for the investigator, since the examination of large numbers of examples would be required before conclusions worthy of credence could be reached. Ophthalmologists have indeed noted that the accelerated rates of development of the brain exist with a disposition to myopia. If such be the case, it is rational to conclude that the shapes of the nasal chambers will be in correlation with the states of the olfactory nerves, and thus the influence which exists between the brain and the eye will be found also to exist between the brain and the nose. The extent to which chronic nasal catarrh may be found among myopes cannot be formulated.

There is no doubt that the patients are as a rule in an unnatural mental condition. The mind is either over-active or dull; the temper is irritable and the disposition intractable; digestion is delicate, and reflex disturbances arising therefrom are of frequent occurrence. The patients belong to the class of subjects that develop morbid appetites, and, in girls, yield the predisposing causes which create so much disturbance at the approach of puberty. Chorea is occasionally noticed as a complication. In one example, a child of precocious intelligence, of delicate constitution, and who had nearly perished during an attack of acute pleurisy, the habit of exhaling air from the nostril was acquired after all symptoms of catarrh had ceased.

The fact that with chronic nasal catarrh, errors of

development of the teeth and rates of growth and nutrition of the nails are often associated, it is convenient to examine together the relations between the nails, the teeth, and other structures. By way of introduction to this topic, it can be said that in pathology the connection between the hair, the nails, and the teeth are numerous.[1] Abnormal development of the teeth occurs in congenital hypertrichosis. Hair and teeth are commonly found in dermoid cysts. In man and in ruminants hairy warts are found upon the cornea. In congenital syphilis, the cornea, the teeth, and the nails are all liable to peculiar inflammatory invasions. Is it not more than a surmise that since all these structures—the hair, nails, enamel-organs, and cornea—arise from the *epiblast*, and are strictly tegumental in nature, that they may be found affected together? Be this as it may, the nails and teeth are certainly to be con-

[1] From the fact that the writer's biological and clinical studies have been pursued conjointly, he trusts that it may be warrantable to introduce at this place some reflections concerning the nails and the teeth. These structures are of correlative value in mammals generally. Blunt, flat teeth are always associated with hoofed digits, and sharp, conical teeth with clawed digits. Adopting the methods of the evolutionist, it may be assumed that the same forces which have been operative in changing the forms of teeth are also operative in changing the forms of the hoofs and claws. This correlation is not found in the earliest of the mammalia. In the process of evolution of the quadrupeds, as they exist about us, from the few generalized types known to have flourished in the past, it can be inferred that the impress upon the nutritive processes which could affect the forms of the teeth could also impress the entire tegumental series of the organism; not only the teeth and the nails would be in common affected by common causes, but the hair as well. Confining these remarks, however, to the nails and teeth, it is probable that the changes of food supply necessitating corresponding changes in habit would most probably affect the claws and hoofs sooner than the teeth, since the latter are more resisting, and, at least in many genera, are completely formed, while the claws and hoofs are of continuous growth, and would be more readily influenced by changes in the environment.

sidered together in studying chronic nasal catarrh in children, the nails at all times and the teeth during the formative period of the enamel-organs.[1]

Through the courtesy of Dr. J. Wilks O'Neill, the attending physician to the Southern Home for Destitute Children, I have recently examined 96 children, with the object in view of determining to what degree a connection could be traced between the teeth and the nails in individuals, many of whom, if not all, were known to have been subjected to neglect and to the various inherited effects which could reasonably be accepted as tending to retard development.

Of the entire 96 children, 15 had white spots on the finger-nails in abundance; 5 of these had noticeably defective dental development — that is to say, excessively chalky enamel—distorted and disfigured crowns, etc. 3 had moderately chalky crowns, but no distortion. 7 had no appreciable defect.

No defective teeth were found in the remaining 81 children, so that the existence of dental defect exactly correlated with the spotted finger-nails. Of the 15 children thus selected, a little less than half the entire number had spotted nails but no dental defect. No attempt was made to ascertain any defect of rate of eruption, for the data obtained from the inmates of an asylum for destitute children would be unreliable. It is quite likely that the numbers of defects of teeth would be increased rather than diminished by more careful examinations made by dentists or other per-

[1] Among the applications of the rate of the growth of nails in connection with diseased states, reference may be made to papers by Dr. S. Weir Mitchell on paralysis, Dr. J. M. DaCosta on typhoid fever, C. E. Hasse on cyanosis, and Poland and Langenbeck on aneurism.

sons accustomed to detect minute abnormalities. Concerning the defective teeth and nails, it is conceded that they may have arisen from acute illness, as in the exanthemata, or from gingival inflammation, as in congenital syphilis. The "measles-tooth" was found but in a single individual, whose case was not enumerated. For the rest it is quite possible some of the appearances may have been due to syphilis, though the pegged tooth was found in a single instance only. No account was taken of the occurrence of catarrh in the inmates, for although it is probable the condition existed it was not reported as present by the attendants. The disease is rarely recognized among the children of the poor, where the symptoms are not likely to receive attention.

From a careful study of nine patients from the writer's practice, it was found that five exhibited white spots on the nails of the hand and defects in the form and irregularity of rates of eruption of the teeth. In a young lady, aged fifteen, who came under care for this phase of catarrh, the superior lateral incisors had never been erupted, while the left deciduous superior canine tooth had remained in the arch. In a second case of a girl, fifteen years of age, who had been much neglected, the depression remaining upon the vertex (answering to the anterior fontanelle) was conspicuous, the teeth were irregular, the vault of the hard palate high and narrow, the disposition shrinking and irritable, and the mental faculties dull. In such patients the epiphyses of the bones will be seen to be too large for the shafts, particularly in the case of the radius as it enters into the composition of the wrist-joint. At the same time the finger-nails

are often marked by large white spots, and the teeth, with milky opacities of the enamel.

The bones being slow in growth, the function of manufacture of blood-corpuscles is largely withheld from the medulla and retained for a longer period than is natural in the bloodvessel-glands, notably the thyroid body, the tonsils, and the lymphatic glands. Hence a disposition exists for these structures to undergo hypertrophy. If this method of reasoning be accepted it is evident that the presence of enlarged tonsils need not be regarded as a primary cause of the condition above outlined, though doubtless they may aid in a secondary manner in maintaining morbid determination of blood about the head, and, if they are sufficiently bulky to cause obstruction in respiration while the mouth is closed, will in themselves create a class of disturbances peculiarly their own. All that is to be emphasized in this connection is the fact that the causes of tonsil-enlargement are due to nutritive conditions which are part of the history of the lime-selecting and the blood-making tissues everywhere in the body.

*Frequency and Diagnosis.*—From a somewhat extended experience in the treatment of these and allied disorders, the writer has concluded that chronic nasal catarrh in the child is a rare disease, and must be separated from the catarrhs which are so common with the children in this community. A child, otherwise healthy, who contracts a severe cold, may have a duration of the nasal discharge for a time, which excites the apprehension of the parents, and the advice of the physician is asked. If no other sign exists but the discharge, that is to say, if the char-

acters already enumerated are absent, the case can be diagnosticated *subacute nasal catarrh*. If, however, in connection with the discharge, distinct evidences of malnutrition exist—as instanced in the skeleton, in the tonsils, nails, and teeth—the diagnosis of *chronic nasal catarrh* can be made.

*Congenital Malformation.*—While causes operating upon the fœtus may be said to create the conditions which have just been recognized, it is also true that an entirely distinct class of pre-natal influences is effective in creating nasal catarrh. In a case of absolute atresia of both nasal chambers—with which condition was associated defective speech—the effect to the ear of the listener was almost identical with that produced in cases of cleft palate, notwithstanding the fact that the palatal and the pharyngeal mechanism were apparently normal. In another case, that of a child three years of age, it was noticed that after an attack of scarlet fever the child could no longer breathe through the nose. The parents were inclined to attribute this condition to changes brought on in the nose by the attack of illness. Inasmuch, however, as the left side was absolutely occluded and the right side merely permitted a cotton-tipped probe to pass through into the pharynx; and, in addition, the fact that the hard palate was narrowed and very high arched, while lachrymal obstruction and fistules existed on both sides, being more on the left, the conclusion was drawn that the condition was congenital, and was due to errors in the formation of the bones of the face. In this case the angles of the mouth were excoriated, the cervical lymphatic glands were enlarged, and the

existence of congential syphilis established, although the teeth were not pegged nor the cornea hazy.

*Effects of Local Injury.*—The extent to which local injury influences the shape of the nasal chamber has a special bearing upon the subject of nasal catarrh in children. As a result of the frequent falls upon the face, it has been assumed that the deflection of the nasal septum which is so common in the adult, may arise from this cause. While it is conceded that blows on the nose may deflect the septum and thus induce obstruction and nasal distress, it is in the experience of the writer a rare occurrence. He has met with four cases only of such a condition, and in one of these a marked hereditary condition existed to nasal catarrh.

*Prognosis.*—The prognosis of simple cases of acute, and of subacute nasal catarrh in children is always favorable. The prognosis of the chronic cases should be guarded. Success depends to such an extent upon the recuperative power of the constitution of the patient, and to the character of the surroundings, that it is difficult to fix upon any one issue in all cases. It has already been seen that if neglected, the disease may be as noticeable in adult life as in childhood. Assuming the premises as to the nature of chronic nasal catarrh to be correct, it is evident that a cure cannot be expected until the development of the larger medullary cavities of the bones is completed. Under appropriate treatment the disease is so far kept under control, that all suffering abates and disappears, at the same time that the general system remains in an unsatisfactory state. Of such cases a reasonable hope may be held out that the disease will be entirely cured by the twenty-first year.

*Treatment.*—The details of the treatment may be embraced under the following heads:—

(1) Removal of the obstruction of the discharges and the reduction in size of the swollen membranes.
(2) The applications of mercurial ointment to the vestibule.
(3) Straightening the nasal septum and overcoming atresia.
(4) The administration of general tonics, etc.

(1) The removal of the daily accumulation of the discharge in the nose and the naso-pharynx is a matter of great moment. If the discharge is in the nose it may be removed by dropping into the nose by a pipette (the head being thrown back) a few drops of a detergent lotion. In a short time the fluid is felt in the throat. It is very gratifying to notice the prompt relief which follows the judicious use of such remedies to the nasal mucous membrane, particularly if the medicine he allowed to trickle in small quantities along the lower border of the inferior turbinated bone.

When a mucoid discharge collects in the naso-pharynx, it is best removed by the use of the pharyngeal syringe. The instrument used should be smaller than the one sold under this name. An instrument of convenient form can be improvised by attaching an Eustachian catheter to the nozzle of a No. 1 India rubber syringe, or to the smaller syringe used by dentists. The rule should be subject to no exception that the liquid is to be placed above the palate with the greatest care and gentleness, and a very small quantity, not over twenty to thirty drops of the liquid, thrown in.

After the instrument has been withdrawn, the head is bowed and the fluid is invited to flow through the nose and to trickle from the nostrils. A child who has had the instrument used with violence, will never consent to a second insertion. It must be remembered that the naso-pharynx in the child is very small, and becomes reduced to a mere chink when constricted, as at the time of the introduction of the nozzle of the syringe. The fluid thrown in cannot return into the oro-pharynx, but must flow forward. Should force be used by sending into the chamber a larger quantity of liquid than it can retain, and obstruction be present in the nasal chambers, the fluid will be exceedingly apt to pass up in the ears. Too much stress cannot be laid upon this source of danger, for, with the general disuse of that dangerous instrument, the nasal douche, in children, the impression is received that the pharyngeal syringe is a safe substitute. It is in the writer's judgment but little less dangerous than the douche, indeed, the source of the danger to the ears is precisely the same in the two instances. No doubt the physician *can* use the douche without danger, as he can the syringe, but if he habitually uses an instrument from which no aural complication can possibly arise, he is then and then only absolutely safe.

A few moments after the first application or toward the close of the first sitting, the handkerchief having been used by the child, large quantities of mucus or muco-pus is removed, and the little patient is made relatively comfortable for a period extending from several hours to a day. Any detergent dissolved in tepid water suffices for the purpose.

No specific action of drugs is to be anticipated. Weak solutions of carbolic acid and glycerine, namely, about a drop of the acid to two drops of glycerine dissolved in an ounce of water, is as good as any. Boracic acid in almost any strength; common table salt; potassium chlorate; are all in use with physicians, and are found efficient. It is not so much the remedy selected but the manner of using it that should receive attentive care. The use of astringents so universally mentioned, such as the preparations of tannin, of zinc, etc., can be, in the judgment of the writer, discarded. The preparations of iron, without exception, are mischievous.

(2) The condition of the floor of the nasal vestibule almost always demands attention. The use of mercurial ointments, such as are employed by oculists for blepharitis and granular lids, is followed by most encouraging results. The ointment of the red oxide of mercury in the proportions of one grain of the salt to one drachm of cosmoline is well borne. The ointment is best applied with a camel-hair brush to the interior of the nostril before retiring. An occasional application in the office to parts not accessible by an untrained hand is advantageous.

(3) The operations for misplaced nasal septum present no peculiar features in children, and the consideration of the procedures need not be undertaken here.

(4) In order to correct the discharge, which is apt to be of a simple character, it is necessary to care for the general health.—The extent to which the tonsils should be reduced in size is to be determined by the degree in which they obstruct respiration. Should

the premises given above respecting the etiology of the affection be accepted, it is evident that the tonsils need not and indeed should not be excised unless they are known to interfere with respiration, in which event they should be removed without hesitation.